Energy Briefs

Helping You Live Energy Efficiently!

High Efficiency Water Heaters

Heating water accounts for approximately 15 percent of a home's energy use. High efficiency water heaters use 10 to 50 percent less energy than standard models, saving homeowners money on their utility bills. Actual energy savings from high efficiency water heaters depend on family size, heater location, and the size and placement of water pipes.

Types Of Water Heating Technologies

• **Heat Pump Water Heaters**. Heat pumps transfer energy from the surrounding air to water in a storage tank. These water heaters are much more efficient than electric resistance water heaters and most effective in warm climates with long cooling seasons.

• **Demand (Tankless) Water Heaters**. Water circulated through a large coil is heated only on demand using gas or electricity; there is no storage tank continuously maintaining hot water. A possible concern with this technology is the limitation on the number of fixtures that can simultaneously use hot water. However, there is an endless supply of hot water and standby losses are eliminated.

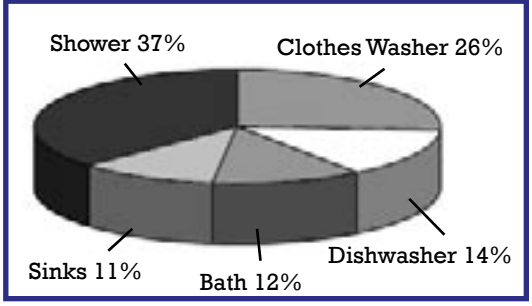
• **Solar Water Heating**. While the initial purchase price of solar water heaters is high compared to standard models, they can be cost effective. That is because the sun's energy is harnessed to reduce operating costs up to 90 percent. Solar water heating systems require a conventional water heater as a backup water heating source to ensure hot water is available when solar energy is not.

• **Storage (Tank) Water Heaters**. Water is kept hot and ready for use at all times in insulated storage tanks with capacities ranging from 20 to 80 gallons. Many fuel options are available, including electricity, natural gas, oil, and propane. One drawback of these units is the energy used to keep the water hot at all times, otherwise known as "standby losses."

Hot Water Usage

(based on national averages)

The typical U.S. homeowner's water consumption by place of use.



Look for the E!

ENERGY STAR, a U.S. Enviromental Protection Agency program, helps us all save money and protect our enviroment through energy efficient products and practices. For more information, visit www.energystar.gov.

South Carolina Energy Office * 1201 Main Street, Suite 430 * Columbia, SC 29201
(803)737-8030 * 1-800-851-8899 * Fax (803737-9846 * www.energy.sc.gov

Comparison of Water Heaters

High Efficiency Water Heater Type	Energy Savings vs. Minimum Standards	Best Climates	Expected Energy Savings Over Equipment Lifetime	Expected Lifetime	Major Advantages
High Efficiency Storage (Tank) (Oil, Gas, Elec.)	10%-20%	Any	Up to $500	8-10 Years	Lowest first cost
Demand (Tankless) Using Gas or Elec.	45%-60%	Any	Up to $1,800	20 Years	Unlimited Supply of hot water
Heat Pump	65% (Compared to electric resistance)	Mild-Hot	Up to $900	10 Years	Most efficient electric fuel option
Solar with Electric Back-Up	70%-90%	Mild-Hot	Up to $2,200	20 Years	Largest energy savings using renewable energy

Important Water Heater Metrics

• First-Hour Rating (FHR). FHR measures how much hot water will be available during the busiest hour of the day. A large tank does not necessarily translate to a higher FHR. The recovery rating is important as it indicates the water heater's ability to replenish hot water as it is drawn from the tank.

• Efficiency. The water heater's efficiency is measured as an Energy Factor (EF), which is usually listed beside the EnergyGuide label. The higher the number, the more energy efficient the water heater.

Save Even More!

-Install a low flow shower head: Low-flow shower heads can reduce hot-water consumption for bathing by 30%. The cost will be between $10-$20 and pay for itself in energy saved in about four months.
-If you have an electric water heater that is warm to the touch install an insulation blanket. They can usually be bought at any home improvement store and can save on energy by keeping the tank better insulated.
-When installing a new water heater make sure to spend the extra 30$ and buy heat traps. Heat traps keep unwanted hot water from flowing out of the hot water heater.
-Some water heaters come set at 140 degrees F. For every 10 degrees F reduction in water temperature, water-heating energy consumption can be reduced 3% to 5%. Keep your water heater set at 120 degrees F, which is adequate for household use and safe for children.

For more information please visit www.energy.sc.gov

*Information provided by the ENERGY Star Program
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SOUTH CAROLINA Energy Office